Catalogue no. 75-006-X
ISSN 2291-0840

Insights on Canadian Society

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Release date: August 2, 2018

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Life satisfaction among Canadian seniors

by Sharanjit Uppal and Athanase Barayandema

Overview of the study

This study uses the 2016 General Social Survey on Canadians at Work and Home to provide a recent assessment of the life satisfaction of seniors in Canada. It includes information on overall life satisfaction, as well as information on nine domains of life: standard of living; health; life achievements; personal relationships; feeling part of the community; time available to do things you like doing; quality of local environment; personal appearance; and feeling safe. The paper also explores the factors associated with life satisfaction and examines several measures of resilience among Canadian seniors.

- Seniors are more satisfied with their lives than those in younger age groups. Men and women in their 60s, 70s and 80s had higher average life satisfaction scores than men and women aged 20 to 59.
- Senior women had higher levels of life satisfaction than senior men. Furthermore, among seniors, life satisfaction levels increase with age.
- Of the nine domains of life examined in this study, seniors were most satisfied with their safety (with an average score of 8.4), the quality of their local environment (8.3) and their personal relationships (8.3). Seniors, however, were least satisfied with their own health (7.2).
- Family income was not significantly associated with life satisfaction among seniors. However, those who stated that their retirement income was insufficient had lower levels of life satisfaction.
- More than 8 in 10 seniors reported that they "always" or "often" had someone they could depend on to help when they really needed it. Seniors who were in this situation had higher levels of life satisfaction.

Introduction

In 2016, 17% of the Canadian population was aged 65 and over. This proportion is expected to increase to around 24% by 2036.[1] Seniors represent a growing segment of the overall population and, as such, examining what determines the well-being of this group of older Canadians is of significant importance.

The economic well-being of Canadian seniors has been studied in the past using income data to look at replacement rates.[2] While income is no doubt important, it represents only one component of overall quality of life. Studying quality of life requires multiple economic and social indicators, including information based on subjective questions. Subjective information on personal preferences can play a role in guiding economic policy,[3] as well as complement other economic and social indicators used to assess quality of life.[4]

The importance of measuring subjective well-being was reflected in a United Nations resolution that was adopted in 2011. The United Nations requested member countries to undertake steps that would give more importance to subjective well-being in the measurement of social and economic development. In 2013, the Organization for Economic Cooperation and Development released a set of guidelines for national statistical offices to measure subjective well-being. Among their recommendations was suggested a life satisfaction question, using a scale of 0 to 10, as the primary measure of subjective well-being.

Canadian surveys such as the Canadian Community Health Survey (CCHS) and the General Social Survey (GSS) have long included a question on life satisfaction. This study, however, uses recent data from the 2016 GSS (see the *Data sources, methods and definitions* section for a description of the survey), which includes new information on a number of dimensions. First, in addition to a question on satisfaction with life as a whole, the 2016 GSS includes questions on satisfaction with various domains of life including standard of living; health; life achievements; personal relationships; feeling part of the community; time available to do things you like doing; quality of local environment; personal appearance; and feeling safe. Second, the GSS includes a set of new questions related to resilience.

While some research has been devoted to life satisfaction among adult Canadians,[5] the focus of this study is on seniors.[6] Factors that affect the life satisfaction of seniors might be different from those that affect the life satisfaction of younger people. For example, while employment is likely a key concern for many people aged 25 to 54, this is generally not the case among those aged 65 and over. Among seniors, health is likely to take greater precedence.

The first part of this paper contains descriptive statistics on overall life satisfaction and its various domains and draws some comparisons with younger age groups. In the second part, a model is used to study associations between life satisfaction and various socioeconomic characteristics. The last part examines the answers provided by seniors to a set of questions that are related to resilience, and how they relate to life satisfaction. Since the GSS is not conducted in institutions, the study excludes seniors who were living in institutions at the time of the survey (see the *Data sources, methods and definitions* section).

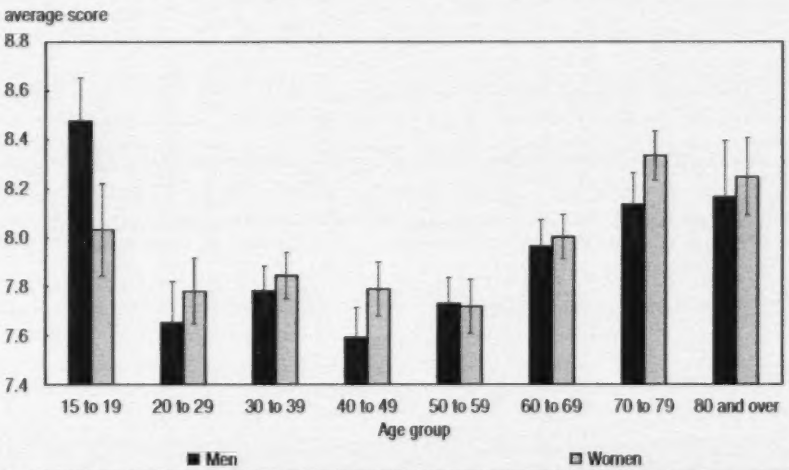
Seniors are more satisfied with their lives than adults in younger age groups

Life satisfaction is a personal subjective assessment of global well-being. In the 2016 GSS, respondents were asked to rate their life satisfaction on a scale of 0 to 10, where 0 means "very dissatisfied" and 10 means "very satisfied". Compared with people aged 20 to 59, people in their 60s, 70s and 80s had higher average life satisfaction scores (Chart 1). The relationship between life satisfaction and age appears to follow a U-shape, as people aged 15 to 19 had life satisfaction levels that were comparable to older individuals.[7,8] This result is more apparent for men.

It is also important to look at the distribution of scores, which reveals that life satisfaction scores tend to be skewed to the right, regardless of age (Chart 2). More than 60% of individuals in every age group reported scores of 8 or higher. The most common score was 8 for all age groups other than for those aged 80 and over. For this age group, the most common score was 10. Overall, the youngest (aged 15 to 19) and oldest (70 and over) age groups were the most likely to rank their life satisfaction at 10.

For the first time, the 2016 GSS included nine new questions asking Canadians how they felt about specific aspects of life, using the same scale as the life satisfaction question. These questions asked about respondents' satisfaction with standard of living; health; life achievements; personal relationships; personal appearance (weight, height and features); safety; feeling part of the community; time available to do things you like doing;

Chart 1
Satisfaction with life as a whole among persons aged 15 and over, by age group, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

and quality of local environment (access to green space, and air or water quality).

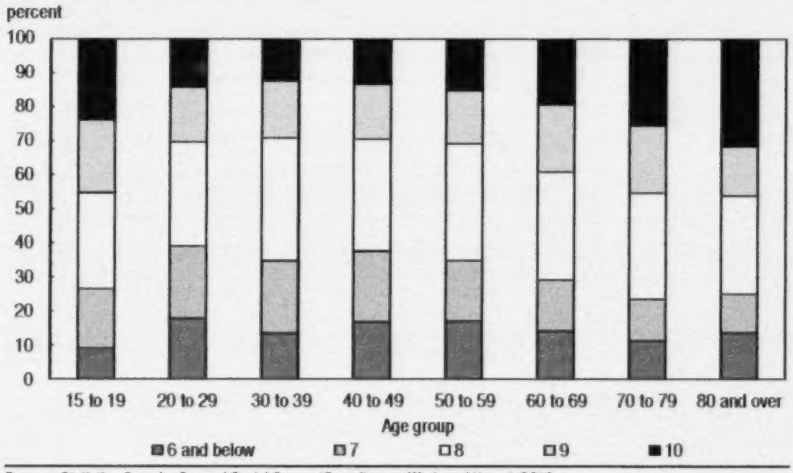
With the exception of satisfaction with health, the other domains of life also exhibited a U-shaped relationship with age.[9] In Chart 3, results are shown by age group for three categories: standard of living, personal relationships and health. The data show that satisfaction with health decreases with age. The average satisfaction with health varies from 8.1 for the youngest age group (15 to 19) to 7.1 for age groups 50 to 59 and 80 and over.

Satisfaction with standard of living, by contrast, was relatively higher among the youngest and oldest age groups, revealing a U-shaped relationship similar to overall life satisfaction. Individuals aged 15 to 19 reported the highest satisfaction with their standard of living, a result likely attributable to the fact that most are still living with their parents at this age.

With respect to personal relationships, seniors had higher levels of satisfaction than all of the other age groups. Seniors aged 80 and over (8.5) and those aged 70 to 79 (8.3) had the highest average satisfaction. Satisfaction with personal relationships was also relatively high among those in the youngest age group (15 to 19), whose satisfaction level was comparable to that of individuals aged 60 to 69 (8.1 for both).

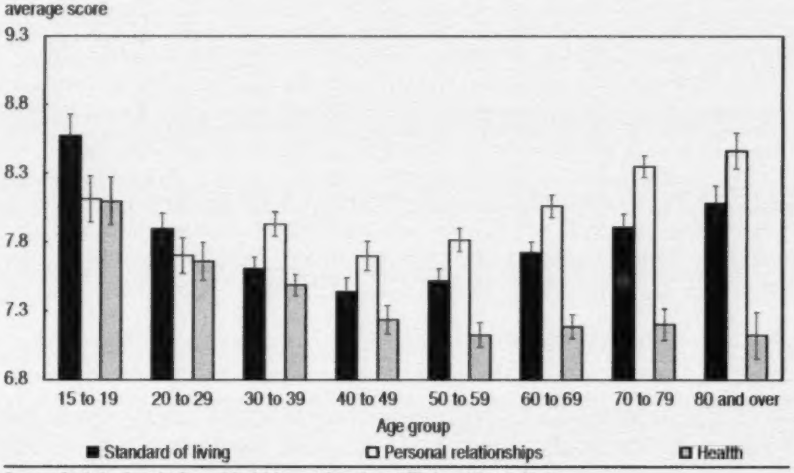
The rest of the paper focuses on individuals aged 65 and over. Seniors did not report the same level of satisfaction for each domain of life. The average satisfaction scores for feeling safe (8.4), quality of local environment (8.3) and personal relationships (8.3) were higher than for life as a whole (8.2) (Chart 4). For the remaining domains, the levels were lower, particularly for health (7.2).

Chart 2
Percentage distribution of life satisfaction scores among persons aged 15 and over, by age group, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

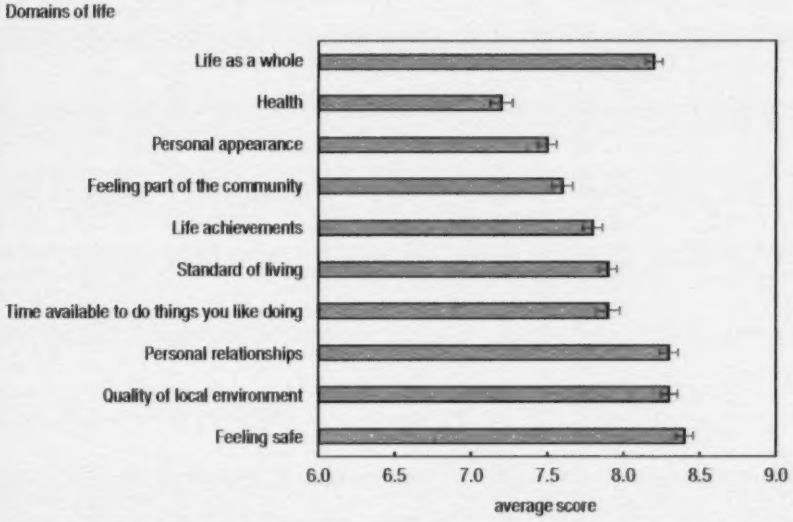
Chart 3
Satisfaction with standard of living, personal relationships and health among persons aged 15 and over, by age, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

An alternative way to view life satisfaction and domains of life is to estimate the proportion of seniors who are in the top (or bottom)

Chart 4
Satisfaction with different domains of life, persons aged 65 and over, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

of the 11-point scale even though there are no absolute thresholds over (or under) which individuals should be deemed to be satisfied or dissatisfied. The proportion of seniors who rated their satisfaction as 9 or 10 was the largest for feeling safe (53%), followed by satisfaction with quality of local environment (51%) and personal relationships (50%).[10] On the other hand, it was the lowest for satisfaction with health (27%), personal appearance (29%), and feeling part of the community (35%).[11]

Life satisfaction and satisfaction with various domains of life are positively correlated

Which one of the nine aspects of life are the most correlated with overall life satisfaction among seniors? In this section, the Pearson correlation coefficient is used to assess the level of correlation between overall life satisfaction and each of the nine domains of life for which respondents provided information in the 2016 GSS. A coefficient of 1 means a perfect correlation between two variables, while a coefficient of 0 indicates no correlation at all.

With a coefficient of 0.60, the highest correlation was between life satisfaction and life achievements (Table 1). The correlations between life satisfaction and health (0.55), standard of living (0.55), personal relationships (0.52), community (0.51) and time (0.50) domains were also relatively high. The lowest correlation was between satisfaction with life as a whole and quality of local environment, with a coefficient of 0.40.

Some other domains of life are also correlated. With a coefficient of 0.54, the highest correlation was between standard of living and life achievements, followed by the correlation between life achievements and personal relationships (0.51), and life achievements and health (0.50). The level of satisfaction with the local environment was less correlated with other domains.

Regression results from a model with satisfaction with life as a whole as the dependent variable and satisfaction with domains as independent variables revealed that other than satisfaction with personal appearance, satisfaction with each of the other domains was positively associated with overall satisfaction (Table 2). Satisfaction with standard of living, life achievements, personal relationships and health had a relatively stronger association with satisfaction as a whole.

As other studies have shown, sociodemographic characteristics such as sex, age, employment status, health status, immigration status, marital status, family income and education are associated with life satisfaction.[12] The 2016 GSS also includes questions about satisfaction with the amount and quality of time spent as a family, perceived social class, having people to depend on, level and main source of stress, and importance of religious or spiritual beliefs, all of which may also be related to life satisfaction. The next section will examine the association between life satisfaction and these variables for Canadian seniors.

Seniors who reported that their health was "excellent" or "very good" had higher levels of life satisfaction

Even among seniors aged 65 and over, there is a relationship between age and life satisfaction. Life satisfaction was the lowest among seniors in younger age groups. Among those aged 65 to 69, the average score

Table 1
Pearson's correlation coefficients between satisfaction with life as a whole and satisfaction with different domains of life, persons aged 65 and over, 2016

	Life as a whole	Standard of living	Health	Life achievements	Personal relationships	Personal appearance	Feeling safe	Feeling part of the community	Time available to do things you like doing	Quality of local environment
	coefficient									
Domains of life										
Life as a whole	1.00									
Standard of living	0.55	1.00								
Health	0.55	0.46	1.00							
Life achievements	0.60	0.54	0.50	1.00						
Personal relationships	0.52	0.43	0.38	0.51	1.00					
Personal appearance	0.47	0.40	0.47	0.46	0.44	1.00				
Feeling safe	0.46	0.44	0.36	0.38	0.39	0.41	1.00			
Feeling part of the community	0.51	0.42	0.39	0.48	0.45	0.41	0.46	1.00		
Time available to do things you like doing	0.50	0.40	0.39	0.42	0.36	0.37	0.39	0.45	1.00	
Quality of local environment	0.40	0.39	0.31	0.35	0.32	0.30	0.43	0.39	0.40	1.00

Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

Table 2
Results from a linear regression model where the dependent variable is satisfaction with life as a whole and independent variables are satisfaction with other domains of life, persons aged 65 and over, 2016

	coefficient
Domains of life	
Standard of living	0.15*
Health	0.13*
Life achievements	0.15*
Personal relationships	0.14*
Personal appearance	0.03
Feeling safe	0.05*
Feeling part of the community	0.08*
Time available to do things you like doing	0.12*
Quality of local environment	0.05*

* significantly different from zero ($p<0.05$)
Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

for overall life satisfaction was 8.0, compared with 8.3 for those aged 75 to 79, and 8.2 for those in older age groups.

Previous studies have examined the association between health and well-being and concluded that health is one of the key factors related to life satisfaction. People with poor health experience lower levels of well-being. This factor is likely to be very important for seniors as health generally deteriorates with age.

In 2016, 45% of seniors stated that their general health was excellent or very good while 61% said that their mental health was excellent or very good. On the other hand, 20% and 6% stated that their general health and mental health were fair or poor. These proportions were similar for men and women.

For both general health and mental health, seniors who stated that they were in "excellent" or "very good" health had a higher level of satisfaction with life as a whole (Chart 5). For general health, the average life satisfaction score ranged from 8.9 for those in excellent health to 6.2 for those in poor health. Results were similar for mental health. The average life satisfaction scores for excellent and poor mental health were 8.7 and 5.3, respectively. The results were nearly identical for men and women.

Separated seniors were less satisfied with life

Marital status is another standard covariate in subjective well-being studies. Among seniors, two-thirds were married or living common law and one-fifth were widowed. These proportions varied by gender. About four-fifths of men were married or living common law compared with slightly more than one-half of women. On the other hand, around 29% of women were widowed compared with 7% men. Among both men and women, around 2% were separated.

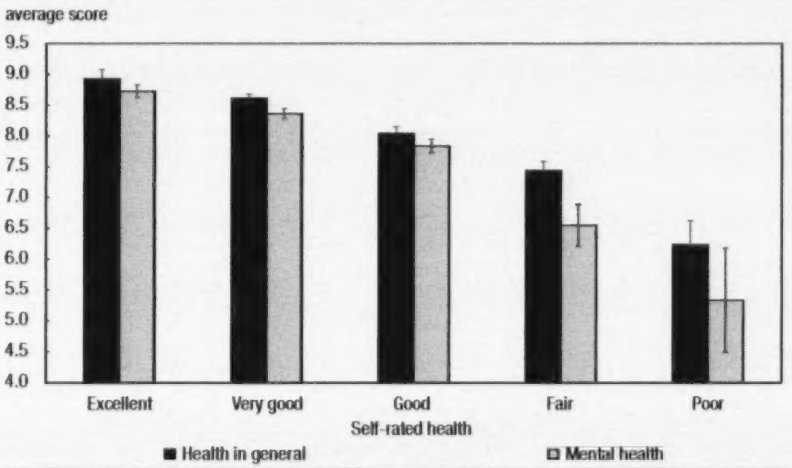
Previous studies have found that married individuals reported higher levels of life satisfaction compared with those who were divorced, separated or widowed, or who never married.[13] The 2016 GSS data confirm this result for seniors (Chart 6). In comparison with married seniors and those living common law, separated seniors were the least satisfied (7.5 versus 8.3). The average score for divorced seniors was also relatively lower (7.7). Similar results were found for both men and women.[14]

Family income is not significantly associated with life satisfaction among seniors

Some of the individual characteristics are likely to be correlated. For example, health status is correlated with age, income and education. To analyze the association of a particular attribute while controlling for the other characteristics, linear regression models were estimated with life satisfaction as a dependent variable and personal characteristics as independent variables.[15] The coefficients indicate the extent to which the score associated with a given characteristic differs from the reference category, and are presented in Table 3.

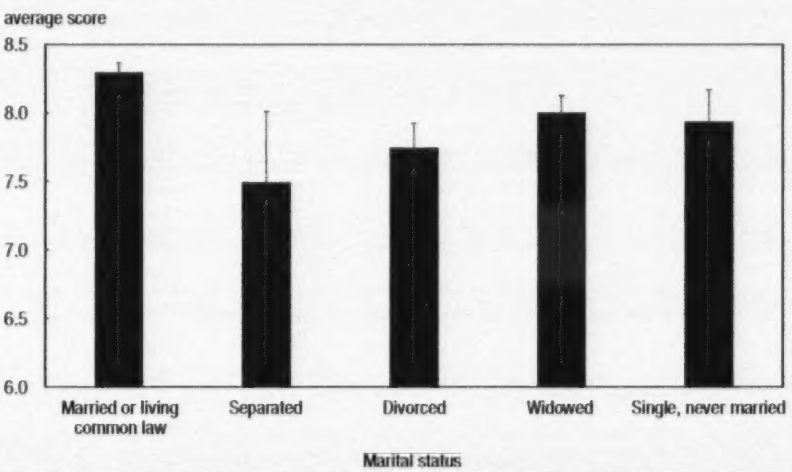
Several model specifications were used. The first model includes standard covariates that are commonly used in life satisfaction studies, including gender, age, highest level of education, marital status, immigrant status, self-rated general and mental health, family income adjusted for household size, home ownership and province of residence (Model 1). In subsequent models, additional variables measuring other aspects of seniors' well-being were added: satisfaction with amount of time with family (Model 2); importance of religious beliefs (Model 3); self-reported social class (Model 4); and main source of stress in life (Model 5).

Chart 5
Satisfaction with life as a whole by self-rated health, persons aged 65 and over, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

Chart 6
Satisfaction with life as a whole by marital status, persons aged 65 and over, 2016



Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

The results from the first model (Model 1) confirm that there is a significant association between personal characteristics and life satisfaction. Life satisfaction

was lower among senior men; younger seniors;[16] and separated, divorced or widowed seniors. Conversely, life satisfaction was higher among immigrant seniors (see the *Satisfaction with life in Canada among immigrants* section for additional information),[17] and seniors residing in the Atlantic provinces.[18] In addition, the results revealed a significant association between self-rated health status and life satisfaction. Seniors who rated their general health as "excellent" had life satisfaction scores around two points higher than those who rated their health as "poor," even after other factors were taken into account. Similar results were found for self-rated mental health. Higher levels of education were associated with lower levels of life satisfaction, a result also found in other studies based on the general population.[19]

However, family income adjusted for household size (included as deciles) was not significantly associated with life satisfaction among seniors (various other specifications of income yielded similar results).[20,21] The result related to family income and life satisfaction among seniors is in contrast to that found for the entire adult population. Existing studies based on individuals aged 15 and over have found life satisfaction to be positively associated with family income.[22] It is possible that, for the senior population, what matters more are family savings or wealth as opposed to family income as later-life consumption is mostly financed out of accumulated savings. While data on savings or wealth are not available in the GSS, there is information on income self-sufficiency in retirement ("Is your retirement income sufficient to comfortably cover your monthly expenses?"). Adding this variable

Table 3
Linear regression model results on life satisfaction, persons aged 65 and over, 2016

	Model 1	Model 2	Model 3	Model 4	Model 5
			coefficient		
Intercept	8.02*	7.43*	7.57*	7.78*	8.60*
Sex					
Male	-0.20*	-0.20*	-0.15*	-0.14*	-0.20*
Female	ref.	ref.	ref.	ref.	ref.
Age group					
65 to 69	ref.	ref.	ref.	ref.	ref.
70 to 74	0.22*	0.20*	0.19*	0.16*	0.18*
75 to 79	0.32*	0.31*	0.28*	0.24*	0.24*
80 to 84	0.42*	0.40*	0.39*	0.32*	0.27*
85 and over	0.46*	0.42*	0.39*	0.33*	0.26*
Highest level of education					
Less than high school	ref.	ref.	ref.	ref.	ref.
High school diploma	-0.24*	-0.24*	-0.23*	-0.27*	-0.24*
Trades/college certificate	-0.26*	-0.24*	-0.24*	-0.30*	-0.25*
University degree	-0.35*	-0.33*	-0.33*	-0.43*	-0.37*
Marital status					
Married or living common law	ref.	ref.	ref.	ref.	ref.
Separated	-0.49*	-0.35	-0.33	-0.28	-0.30
Divorced	-0.51*	-0.39*	-0.37*	-0.33*	-0.34*
Widowed	-0.39*	-0.28*	-0.27*	-0.28*	-0.34*
Single, never married	-0.20	-0.11	-0.12	-0.08	-0.17
Immigrant status					
Immigrant	0.28*	0.28*	0.27*	0.28*	0.25*
Canadian-born	ref.	ref.	ref.	ref.	ref.
Self-rated health in general					
Excellent	0.54*	0.53*	0.52*	0.50*	0.40*
Very good	0.39*	0.37*	0.35*	0.33*	0.30*
Good	ref.	ref.	ref.	ref.	ref.
Fair	-0.50*	-0.47*	-0.47*	-0.45*	-0.37*
Poor	-1.52*	-1.45*	-1.44*	-1.39*	-1.35*
Self-rated mental health					
Excellent	0.66*	0.66*	0.65*	0.61*	0.50*
Very good	0.34*	0.32*	0.32*	0.29*	0.27*
Good	ref.	ref.	ref.	ref.	ref.
Fair	-0.89*	-0.88*	-0.88*	-0.83*	-0.74*
Poor	-1.69*	-1.65*	-1.65*	-1.64*	-1.57*
Main activity in the past 12 months					
Working at a paid job or self-employed	ref.	ref.	ref.	ref.	ref.
Retired	-0.10	-0.14	-0.13	-0.15	-0.21*
Other	-0.22	-0.26	-0.26	-0.26	-0.32*
Home owner					
Yes	0.05	0.03	0.05	0.01	-0.02
No	ref.	ref.	ref.	ref.	ref.
Adjusted family income before tax					
Decile 1	-0.03	-0.04	-0.05	0.00	-0.05
Decile 2	-0.03	-0.03	-0.04	0.01	-0.03
Decile 3	-0.01	0.00	-0.01	0.02	-0.04
Decile 4	-0.01	-0.02	-0.03	0.00	-0.01
Decile 5	ref.	ref.	ref.	ref.	ref.
Decile 6	0.06	0.06	0.05	0.04	-0.01
Decile 7	-0.04	-0.03	-0.02	-0.03	-0.02
Decile 8	0.06	0.07	0.06	0.04	0.01
Decile 9	0.11	0.12	0.13	0.07	0.03
Decile 10	0.01	0.00	0.01	-0.09	-0.07

Table 3
Linear regression model results on life satisfaction, persons aged 65 and over, 2016

	Model 1	Model 2	Model 3	Model 4	Model 5
	coefficient				
Province					
Newfoundland and Labrador	0.30*	0.30*	0.27*	0.26*	0.19
Prince Edward Island	0.24*	0.23*	0.21*	0.18	0.15
Nova Scotia	0.38*	0.36*	0.33*	0.35*	0.31*
New Brunswick	0.30*	0.30*	0.28*	0.29*	0.28*
Quebec	0.00	0.00	0.06	0.01	-0.06
Ontario	ref.	ref.	ref.	ref.	ref.
Manitoba	0.13	0.14	0.14	0.14	0.09
Saskatchewan	0.16	0.15	0.13	0.16	0.13
Alberta	0.10	0.09	0.11	0.14	0.11
British Columbia	0.09	0.10	0.12	0.12	0.12
Satisfaction with amount of time spent with family					
Very satisfied/satisfied	...	0.74*	0.73*	0.73*	0.62*
Neither satisfied nor dissatisfied/dissatisfied/ very dissatisfied	...	ref.	ref.	ref.	ref.
Valid skip	...	0.53*	0.51*	0.50*	0.43*
Importance of religious or spiritual beliefs					
Very important	...	...	ref.	ref.	ref.
Somewhat important	...	...	-0.23*	-0.24*	-0.22*
Not very important	...	...	-0.38*	-0.38*	-0.37*
Not at all important	...	...	-0.28*	-0.24*	-0.29*
Self-reported social class					
Upper/upper-middle	...	...	...	0.21*	0.18*
Middle	...	...	...	ref.	ref.
Lower-middle	...	...	...	-0.51*	-0.44*
Lower	...	...	...	-0.85*	-0.79*
Main source of stress in life					
No stress	...	...	...	...	ref.
Work	...	...	...	...	-0.61*
Financial concerns	...	...	...	...	-0.98*
Family	...	...	...	...	-0.79*
Not enough time	...	...	...	...	-0.46*
Own health	...	...	...	...	-0.82*
Other	...	...	...	...	-0.59*

... not applicable

* significantly different from reference category (ref.) ($p < 0.05$)

Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

to the model revealed a positive association between life satisfaction and income self-sufficiency.[23]

In Model 2, a variable indicating whether seniors are satisfied with time spent with family was included.[24] This variable was positively associated with life satisfaction.[25] On inclusion of this variable, the conclusions regarding other characteristics remained the same, except for marital status. Specifically, the result for "separated" became statistically insignificant whereas the coefficients for divorced and widowed registered notable declines. Thus, part of the difference in life satisfaction scores among the married and the other groups can be explained by time spent with family.

Model 3 added a variable about religious behaviour, which might also be associated with subjective well-being.[26] In the 2016 GSS, a question asked respondents how important religious or spiritual beliefs were to the way they lived their lives. About 37% stated that such beliefs were very important and 34% said that they were somewhat important. The remaining 17% and 11% stated that they were not very important and not at all important, respectively. Results revealed that individuals who stated that religious and spiritual beliefs were very important were likely to have higher life satisfaction than the others.[27]

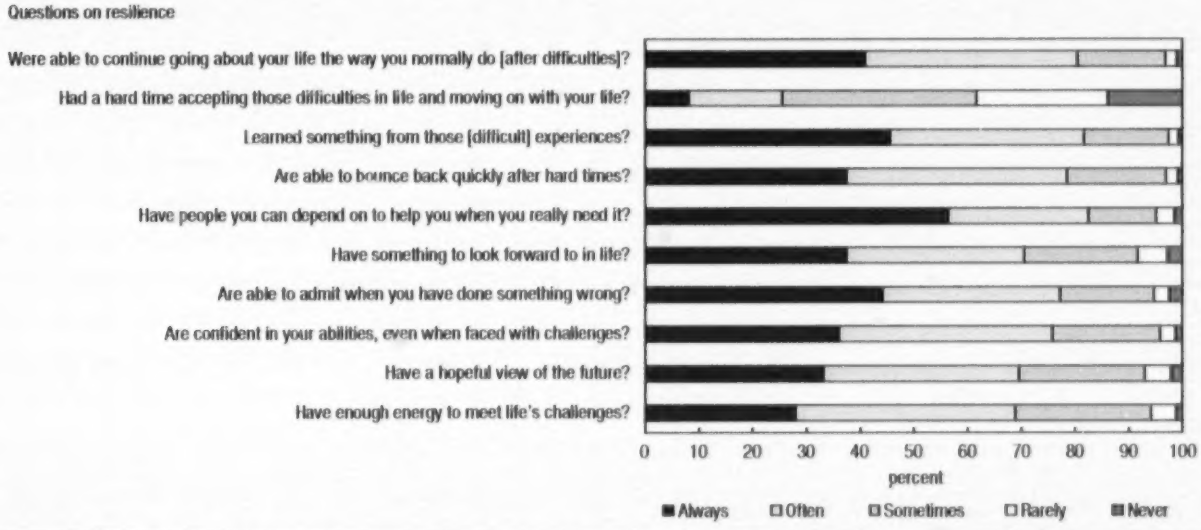
Model 4 added a variable about perceived social class, which was included for the first time in the 2016 GSS. The majority of seniors (67%) stated that they belonged to the middle class. Another 15% and 12% said they belonged to the upper-middle and lower-middle classes, respectively. Only 1% said upper class, while 3% said lower class.[28] Regression results showed that those who felt that they belonged to a relatively higher social class had higher levels of life satisfaction.[29]

Lastly, Model 5 included sources of daily life stress in addition to all other variables mentioned previously. Nearly three-quarters of seniors reported some degree of stress. Within this population, the two main sources of stress were family issues (33%) and health issues (24%). Regardless of the source, individuals with stress had lower life satisfaction levels than those without stress. Stress over financial concerns had the strongest negative association with the life satisfaction of seniors.[30,31,32]

Resilience is positively associated with life satisfaction

The 2016 GSS includes a set of new questions dealing with resilience (Chart 7).[33] In all questions, other than "had a hard time accepting difficulties in life and moving on,"

Chart 7
Responses to questions on resilience, persons aged 65 and over, 2016


Questions on resilience
Were able to continue going about your life the way you normally do [after difficulties]?
Had a hard time accepting those difficulties in life and moving on with your life?
Learned something from those [difficult] experiences?
Are able to bounce back quickly after hard times?
Have people you can depend on to help you when you really need it?
Have something to look forward to in life?
Are able to admit when you have done something wrong?
Are confident in your abilities, even when faced with challenges?
Have a hopeful view of the future?
Have enough energy to meet life's challenges?
0 10 20 30 40 50 60 70 80 90 100
percent
Always
Often
Sometimes
Rarely
Never

Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

the responses "always" and "often" can be considered to be indicators of resilience. At least two-thirds of seniors stated "always" or "often" to each of those resilience questions. For example, more than 8 in 10 Canadian seniors reported that they "always" or "often" had someone they could depend on to help when they really needed it. For the question "had a hard time accepting difficulties in life and moving on," the responses "never" and "rarely" would be indicators of resilience—more than one-third of seniors chose these responses.

Being resilient is positively associated with life satisfaction. The gap in life satisfaction scores among individuals who stated "always" and "never" was the largest for "have enough energy to meet life's challenges" (3.0), "are confident in your abilities, even when faced with challenges" (2.7), and "have a hopeful view of the future" (2.6) (Table 4).

To test for the robustness of the relationship between resilience and life satisfaction, separate regressions were estimated for each of the resilience questions given their correlation. The models also controlled for all characteristics included in Model 5 (Table 3) discussed before. The results confirmed the descriptive findings that being resilient was associated with higher life satisfaction (Table 5).[34] In almost all cases, those who answered "always" to the resilience questions had significantly higher levels of life satisfaction. In contrast, those who answered that they "never" had enough energy to meet life's challenges, "never" had a hopeful view of the future and "never" were confident in their own abilities had significantly lower levels of life satisfaction. Such results suggest that personal perceptions of resilience, in addition to the personal characteristics described above, such as health, age and marital status, also play a role in the life satisfaction of seniors.

Conclusion

Gross domestic product (GDP) has traditionally been used as the main measure of a population's economic well-being. However, in recent decades, there has been a debate on the shortcomings of this approach.[35] Thus, many have proposed that measures of subjective well-being be used to complement material indicators such as GDP. Given that subjective well-being is being increasingly used to measure

Table 4
Average life satisfaction scores by questions on resilience, persons aged 65 and over, 2016

	Always	Often	Sometimes	Rarely	Never
			average score		
Questions on resilience					
Have enough energy to meet life's challenges?	8.9	8.2	7.7	6.7	5.9
Have a hopeful view of the future?	8.9	8.2	7.5	6.7	6.3
Are confident in your abilities, even when faced with challenges?	8.7	8.2	7.6	6.7	6.0
Are able to admit when you have done something wrong?	8.4	8.1	7.9	7.9	7.5
Have something to look forward to in life?	8.7	8.2	7.5	7.0	7.2
Have people you can depend on to help you when you really need it?	8.5	8.0	7.4	7.2	7.0
Are able to bounce back quickly after hard times?	8.7	8.2	7.3	7.0	7.0
Learned something from those [difficult] experiences?	8.5	8.1	7.5	7.6	7.3
Had a hard time accepting those difficulties in life and moving on with your life?	8.2	8.0	7.9	8.3	8.8
Were able to continue going about your life the way you normally do [after difficulties]?	8.7	8.0	7.5	6.7	6.6

Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

Table 5
Results from separate linear regression models on life satisfaction that included resilience indicators, persons aged 65 and over, 2016

	Always	Often	Sometimes	Rarely	Never
			coefficient		
Measures of resilience					
Have enough energy to meet life's challenges	0.57*	0.21*	ref.	-0.61*	-1.46*
Have a hopeful view of the future	0.87*	0.45*	ref.	-0.29*	-0.85*
Are confident in your abilities, even when faced with challenges	0.60*	0.33*	ref.	-0.51*	-1.12*
Are able to admit when you have done something wrong	0.17*	0.02	ref.	-0.12	-0.40
Have something to look forward to in life	0.74*	0.43*	ref.	-0.29*	-0.23
Have people you can depend on to help you when you really need it	0.61*	0.32*	ref.	-0.19	-0.49
Are able to bounce back quickly after hard times	0.68*	0.42*	ref.	-0.46*	-0.26
Learned something from those [difficult] experiences	0.49*	0.30*	ref.	0.03	-0.32
Had a hard time accepting those difficulties in life and moving on with your life	0.11	0.02	ref.	0.11	0.39*
Were able to continue going about your life the way you normally do [after difficulties]	0.56*	0.22*	ref.	-0.60*	-0.72

* significantly different from reference category (ref.) ($p < 0.05$)

Note: The results presented in this table are from linear regression models that included all variables in Model 5 of Table 3.

Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

people's welfare, it is important to study factors associated with subjective well-being. This article used data from the 2016 General Social Survey and looked at factors associated with life satisfaction among Canadians seniors. Generally speaking, life satisfaction is higher during the early years of adulthood and among seniors than among the other age groups.

One of the most notable findings of this paper is that family income was not associated with life satisfaction among seniors. However, retired individuals who stated that their retirement income was insufficient had lower life satisfaction scores than those who reported sufficient retirement income. Seniors who reported that financial concerns were a source of stress also reported lower levels of life satisfaction than those who did not report any stressors at all.

Hence, factors other than income seem to be more significant in the life satisfaction of seniors. Health status, in particular, is an important factor associated with life satisfaction, but not the only factor. Personal characteristics such as age, marital status, and location of residence also matter, along with other factors like stress levels, satisfaction with the amount of time spent with family, and the importance of religious and spiritual beliefs. Immigrant seniors also reported higher levels of satisfaction than Canadian-born seniors.

Lastly, the study also finds that resilience among Canadian seniors is an important correlate of life satisfaction, even after accounting for other factors. Such results suggest that, for seniors, non-monetary factors such as having a

large network of family and friends, and having the capacity to face everyday challenges may matter even more to their life satisfaction than many other factors, including family income. With the aging of the Canadian population, achieving a better understanding of the factors that are driving their life satisfaction will continue to be an important research topic.

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Data sources, methods and definitions

Data sources

The article uses data from the 2016 General Social Survey (GSS). The GSS is a voluntary annual cross-sectional survey that started in 1985. Each cycle contains a core topic and a standard set of sociodemographic questions. The theme for the 2016 cycle was "Canadians at work and home." The survey takes a comprehensive look at the way Canadians live by incorporating the realms of work, home, leisure and overall well-being. In this cycle, a number of new questions were added to complement those previously asked on subjective well-being. Included are questions on purpose in life, opportunities, life aspirations, outlook and resilience.

The target population for the survey is non-institutionalized persons aged 15 and over, living in the 10 provinces of Canada. The survey was conducted from August 2016 to December 2016. The overall response rate to the survey was 50.8%, while the total sample size was 19,609. This article focusses on the senior population (aged 65 and over), which consisted of 5,577 observations after removing observations with missing information on life satisfaction.

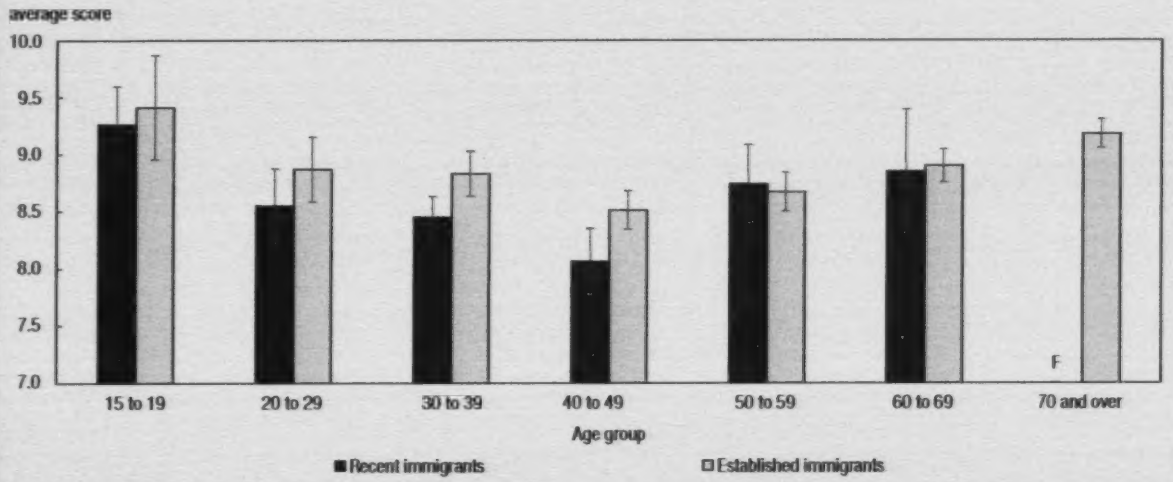
The main variable of interest in the study is life satisfaction. In the survey, respondents were asked the following question: "Using a scale of 0 to 10, where 0 means 'Very dissatisfied' and 10 means 'Very satisfied', how do you feel about your life as a whole right now?" Similar questions were asked for satisfaction with the following domains of life: standard of living; health; life achievements (currently achieving in life); personal relationships; feeling part of the community; time available to do things you like doing; quality of local environment; personal appearance; and feeling safe.

Satisfaction with life in Canada among immigrants

In the 2016 GSS, immigrants were asked a question on an additional domain of satisfaction: "How satisfied are you with your life in Canada?" Around 41% of immigrants aged 15 and over reported being completely satisfied (score of 10) with their life in Canada (Chart 8). The average score was 8.7.

Similar to the results obtained for overall life satisfaction, satisfaction with life in Canada had a U-shaped relationship with age. The average scores for those aged 15 to 19 and 70 and over were 9.3 and 9.2 compared with 8.4 for those aged 40 to 49. Recent immigrants (immigrated within 10 years of the survey year) were slightly less satisfied with their lives than established immigrants (8.5 versus 8.8). The U-shaped relationship held for both recent immigrants and established immigrants.

Chart 8
Satisfaction with life in Canada, by age, immigrants aged 15 and over, 2016



F too unreliable to be published
Source: Statistics Canada, General Social Survey (Canadians at Work and Home), 2016.

Notes

1. See Statistics Canada (2010).
2. See, for example, LaRochelle-Côté et al. (2010). Replacement rates measure the extent to which family income at a given point during the working years is replaced during the retirement years.
3. See Senik (2005).
4. See Diener and Suh (1997).
5. See, for example, Frank and Hou (2017); Lu et al. (2015); Hou (2014).
6. In recent years, various studies have focused on Canadian seniors. For example, Arriagada (2018) looked at time use; Marshall (2011) studied debt; and Uppal (2010 and 2015) examined labour market activity.
7. Numerous studies have found that subjective well-being is U-shaped in age (see, for example, Blanchflower and Oswald, 2008). However, recent literature has shown that the U-shape is not universal (Fortin et al., 2015). The U-shape appears to be limited to regions of East Asia and North America/Australia/New Zealand.

8. However, note that seniors, especially those at older ages, are more likely to be institutionalized. Individuals living in institutions are excluded from the GSS. Given the fact that the institutionalized seniors are likely to be in relatively poor health and that poor health is associated with lower levels of life satisfaction, satisfaction scores based on non-institutionalized seniors might have an upward bias for oldest individuals. In 2016, the proportions of individuals living in institutions for age groups 0 to 64, 65 to 69, 70 to 74, 75 to 79, and 80 and over were 0.4%, 0.9%, 1.4%, 2.9% and 13.2%, respectively.

9. This was true for both men and women. Specific results for each of these categories are available upon request.

10. Scores of 9 or 10 were chosen to represent the top of the scale following Lu et al. (2015), who also mention that the choice is arbitrary.

11. Health (31%), personal appearance (24%) and feeling part of the community (24%) had the largest proportions of seniors reporting a satisfaction score of 6 or lower.

12. See, for example, Boarini et al. (2012); Lu et al. (2015).

13. See, for example, Lu et al. (2015) in the Canadian context.

14. Divorced, separated and widowed seniors are more likely to live alone. Among men living alone, the average life satisfaction was 7.5, compared with 8.2 among those who were living with other family members. Among women, the difference was smaller, at 8.1 among those living alone and 8.3 among those living with others.

15. Given that life satisfaction is an ordered variable, an ordered logit or an ordered probit could have been used. Because the coefficients of these models do not have a straightforward interpretation, linear regression models were used in this paper. However, similar conclusions were found with an ordered logit model.

16. It was pointed out earlier that individuals with bad health might be excluded from the survey because they are more likely to be institutionalized, which would create a bias in the age results as health deteriorates with age. However, it should be noted that 38% of seniors aged 85 and over reported in the GSS that they were in very good/excellent general health, compared with 47% of seniors aged 65 to 69. The difference was more pronounced for mental health: 47% for older seniors versus 66% for younger seniors.

17. When a variable representing the region of birth was included, immigrants from North America, Northern Europe, Africa and South Asia were likely to be more satisfied with their lives than Canadian-born seniors. The coefficients for immigrants from the rest of the regions were positive but statistically insignificant.

18. For a detailed regional analysis of life satisfaction, see Lu et al. (2015).

19. See, for example, Lu et al. (2015). These studies have found that when health status and income were not included as controls, the association became positive, revealing that education affected life satisfaction through its impact on other outcomes. For seniors, when health status and income were excluded from the model, the association between education and life satisfaction became statistically insignificant.

20. A number of alternative model specifications were used to check for the robustness of this result. First, income was used as a sole variable. Second, other income variables were used, such as income quintiles, income categories (based on Lu et al., 2015), and a continuous income variable. Third, life satisfaction was specified as a binary variable with levels 9 and 10 or levels 8, 9 and 10 representing high levels of life satisfaction. Lastly, the models were run with unadjusted family income. In all of these alternative specifications, there was no significant relationship between family income and life satisfaction. Models with individual income rather than family income did not yield consistent results.

21. The models were also estimated separately for each satisfaction domain, and it was found that individuals in the ninth and tenth deciles were more satisfied with their standard of living than those in the lower eight deciles.

22. See, for example, Lu et al. (2015). Preliminary analysis for the population aged 15 and over using the 2016 GSS (used in this study) and the same income categories as Lu et al. (2015) also revealed a positive association between family income and life satisfaction.

23. Results (available upon request) indicate that individuals who said their retirement income was not sufficient had life satisfaction scores that were 0.5 points lower than the scores of those who said their retirement income was sufficient.

24. Among seniors with families, 90% stated that they were either very satisfied or satisfied with the amount of time spent with their family. The remaining seniors said they were very dissatisfied or dissatisfied, or neither satisfied nor dissatisfied.

25. In addition to the amount of time spent with the family, respondents were also asked whether they were satisfied with the quality of time spent. This was also positively associated with life satisfaction.

26. Existing studies show a positive association between religious commitment and life satisfaction (Ellison et al., 1989; Lim and Putnam, 2010). Uppal (2006) finds that, among persons with disabilities, those who attend religious services or related activities regularly or occasionally report higher levels of happiness than those who do not. Lim and Putnam (2010) further investigated the role of religious behaviour and found that the positive association was entirely mediated by church friends.

27. A notable change in the other results was the decrease in the difference in life satisfaction between men and women. This was because women placed more importance on religious beliefs: 43% of women stated that religious beliefs were very important compared with 30% of men.

28. Even though the majority of individuals in each family income decile identified themselves as belonging to the middle class, there was some association between family income and social class. For example, whereas 54% of those in the top decile stated they belonged to the middle class, 41% reported being in the upper/upper-middle class. At the other end of the spectrum, 64% of those in the lowest income decile identified as being the middle class and 25% in the lower-middle/lower class. There was a similar association between the highest level of education and social class. Although the majority at each level of education reported belonging to the middle class, those with a university degree were more likely to identify as belonging to the upper/upper-middle class.

29. When class was included in the model, two notable changes were observed in the age and educational attainment results. The difference in the life satisfaction scores of those aged 65 to 69 and the older age groups decreased as the former were more likely to state that they belonged to the upper/upper-middle class and less likely to say they belonged to the lower class. On the other hand, those with higher levels of education were now likely to have lower life satisfaction scores given that they were more likely to say they belonged to a relatively higher social class.

30. An alternative model was estimated with level rather than source of stress. Higher levels of stress were associated with lower levels of life satisfaction. Those who stated that their lives were quite a bit or extremely stressful had life satisfaction scores 1.7 points lower than those who did not have any stress.

31. Stress was correlated with various covariates in the model and hence the coefficients changed somewhat. For example, the difference in life satisfaction of those aged 80 and over and those aged 65 to 69 decreased given that the older population was more likely to experience stress. Similarly, the gap among those reporting excellent health and the others shrank when stress was accounted for. However, all the qualitative conclusions remained unchanged.

32. With the inclusion of the variables on sources of stress and self-reported social class, the higher life satisfaction results found for Newfoundland and Labrador and Prince Edward Island were no longer significant.

33. The new module with resilience questions in the GSS is based on a wide array of research. The questions were developed from a "factor table" with three concepts of resilience and eight domains: individual infrastructure (personality, health status); tools (social connections, assets and resources, aspirations and goals); and the environment (compound effects, cultural resonance and institutional support). The new module also draws from questions that had been asked in other surveys wherever possible.

34. Some coefficients for other variables changed for some resilience models. The most notable changes were a decline in the health status coefficients. For general health status, the notable changes were in models with the following resilience questions: "have enough energy to meet life's challenges"; and "have a hopeful view of the future." In addition to the previous two changes, for mental health status the changes were also notable in models with "are confident in own abilities, even when faced with challenges;" "have something to look forward to in life;" and "are able to bounce back quickly after hard times."

35. For a detailed discussion on this topic, see Helliwell et al. (2015).

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